TABLE 1—(Continued)

Skin pigmentation

| PLACE | RELIGION | SEX | SUBJECTS | PER CENT HAVING PIGMENTATION OF GRADE 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|---|
| Boarij | Muslim | Male | 69 | 53.9 | 41.2 | 2.9 | 0 |
| " | " | Female | 59 | 72.9 | 27.1 | 0 | 0 |
| Meshghara | Christian | Male | 90 | 71.1 | 28.9 | 0 | 0 |
| " | " | Female | 17 | 76.5 | 23.5 | 0 | 0 |
| " | Muslim | Male | 122 | 63.6 | 36.4 | 0 | 0 |
| " | " | Female | 67 | 70.1 | 29.9 | 0 | 0 |
| " | All | Male | 222 | 66.7 | 33.3 | 0 | 0 |
| " | " | Female | 84 | 71.4 | 28.6 | 0 | 0 |
| Beyrouth and Ghazir (Armenians) | Christian | Male | 196 | 34.7 | 62.7 | 2.6 | 0 |
| | " | Female | 173 | 50.3 | 49.7 | 0 | 0 |
| 'Abadiya | Druse | Male | 11 | 63.6 | 36.4 | 0 | 0 |
| " | " | Female | 17 | 70.6 | 29.4 | 0 | 0 |

Since there are often sharp local variations in physical characteristics in Syria, we give our results separately for each locality investigated. Where more than one religious group was represented, we have subdivided our subjects on this basis also, as the barriers to mixture of different religious groups are still kept up, and there is some reason to suppose that different ethnic stocks may be represented in each to different degrees. This also enables us to look for the possible effects of inbreeding on the various characters.

## DISCUSSION OF RESULTS

The results for the A,B blood groups are on the whole what was to be expected. The Armenian results show the high percentage of A found by previous workers (compare Boyd, '39 b). These individuals represent a recent influx into our area. We were informed that our subjects were mostly from Marash and vicinity, Turkey. In the case of the two Arab villages, it is rather surprising that the results for Boarij, where all are Moslems, should agree well with the results for the Christians from Meshghara, while the Christians and Moslems in Meshghara show a significant difference in blood group frequencies. It is our impression, however, that the

It is our impression, however, that the Moslems in Meshghara represent the original population, while the Christians mostly represent a more recent immigration, probably from regions near the coast. The inhabitants of Boarij, and the inhabitants of Beyrouth tested by Parr ('31) show a per cent of group B somewhat in excess of that in the Moslems of Meshghara. It is somewhat difficult to test for the significance of this difference since Parr's results themselves do not seem to be altogether internally consistent. In any case, throughout the Near East, sharp local differences in racial characters can be observed, and are not surprising, in view of the intense conservatism of the local cultures.

Our A,B results for the Druse, doubtless because of the small size of the sample, do not agree well with those of Parr ('31); no significance can be attributed to this.

The results reported by Shanklin ('38) for the Bekaa and Alouites, whom he lists as mountain dwelling groups, are also different from each other, but perhaps not on the whole too different from our own.

The frequencies for the M,N types, the first to be reported for settled inhabitants of Syria, do not seem to present anything unusual. The M,N frequencies in Syrians and Armenians apparently do not differ notably from those in Europe, but do seem to differ from those in the only two tribes of Syrian Bedouin tested for M and N, where significantly low values of N were found (Boyd and Boyd, '38). We are inclined to consider this another example of the evolutionary effects of isolation (compare Boyd, '40). In M and N frequencies the Druse may resemble the Bedouin, for the $\chi^2$ test indicates that the difference between the M,N frequencies of the Druse and the inhabitants of Boarij, for instance, is significant, in spite of the smallness of the samples. Of course, if the samples had been larger the difference might have been much less marked.

The taste reactions to phenyl-thio-carbamide show in every case the higher proportion of tasters among the females previously reported (Fisher and Brandt, '37; Boyd and Boyd, '37). The per cent of tasters is probably not significantly different in any of these villages from the results obtained for

other Near-Eastern peoples (Parr, '34; Boyd and Boyd, '37). The whole Near East, if we may generalize from the still relatively scanty data at our disposal, seems to be relatively homogeneous with respect to the "tasting" gene. Our results support a suggestion previously made by us that most of Parr's subjects were males.

It is still open to doubt if the presence of hair on the second phalanx is a simple hereditary character. In our previous report (Boyd and Boyd, '37 a), we mentioned that, although there was considerable variation in sex incidence, the racial variations observed were slight. On the whole, the same statement would also apply to our new data, but there is a suggestion that there is a higher incidence of mid-digital hair in Boarij than in Meshghara, for instance. Sewall ('20) found very few Eskimos had mid-digital hair, suggesting that strong racial differences may exist.

The grades of eye color found in the populations reported here are fairly consistent, with rather more light eyes than we found in Egypt. The hair pigmentation is on the whole dark, and it will be noted that in several cases there is a suggestion that the males are darker. A similar tendency was observed in some of the populations we reported in 1937. The skin is on the whole lighter than in Egypt, and again the males seem to be the darker. Greater exposure to the sun may be a contributing factor. The Armenians seem somewhat darker than the Syrians (compare Seltzer, '36). Our observations on Syrian pigmentation seem to agree roughly with those of Shanklin ('38).

*Bedouin results.* In addition to testing the blood groups of the Syrian Bedouin, we made other observations on them. The blood groups have been previously reported (Boyd and Boyd, '38), but it may be worth while to present here the other results, even though the conditions under which we had to work were such that our pigmentation, etc., figures for the Bedouin are less to be trusted (see table 2). The subjects were all males.

This may indicate that the present Armenians consist of two groups, two more perhaps closely related, but still differing.

From the same members from which the Armenians descended, also the Khalibians (who call themselves also Syrians, Assyrians or Aramaeans, Mesopotamia originate. In former times also the Armenians called themselves Khaldi, and their country Khaldia and both groups seem to descend from an earlier stock, the Hurrians according to Speiser.[1])

Now curiously with the Khalibians I found the same index as with the hyperbrachycephalic Armenian group, viz. 86.1 (Chamir found a higher index = 88).

This may indicate that the original Armeno-Khalibian or Hurrian stock is chiefly represented by the hyperbrachycephalic or real Armenoid group and that the 83.5 group amongst the Armenians is a subbrachycephalic Caucasian admixture.

As one *London* already pointed out, it is very likely that the speed of the Armenoid group is a much greater one than the speed of the Armenians

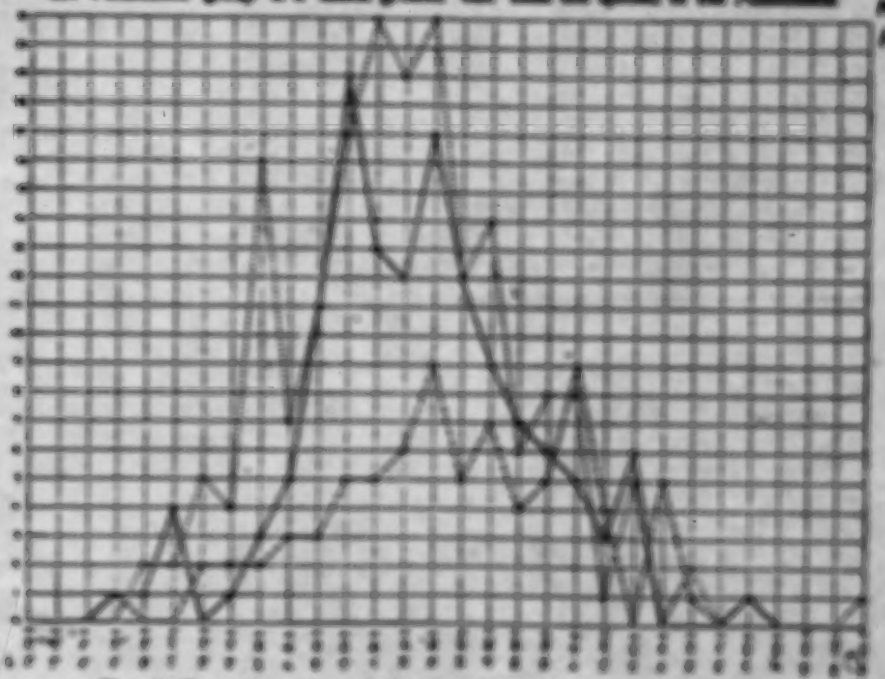

Fig. 3. Frequency curve of 256 Lebanese (dotted line) superimposed on the Armenian curve (continuous line. [2])

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1) Speiser, Mesopotamian Origins, 1930.

groups. Probably a large part of the Armenoids were certainly not Indo-European speakers, but it is not known what languages they spoke. Perhaps some of the Asiatic ancestors of the Lydians, the Lycians and Albanians—Perhaps also the Kelteminar people (see below) belong to this group.—

That for the Lebanese this supposition is right appears from the fact that the frequency curve of the Lebanese contains practically the same type as the Armenian curve, as the superposition of these curves shows. (Fig. 3).

Fig. 4. At the left two Armenians from Dalmat, at the right two Hittite[illegible]

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LEGAL HOLD



This seems to prove that the new law spread for South from Amorite groups over the mountains and coasts of Syria, south here in Palestine, as agrees with the fact that the Amorite(s) disappear(s) with the population of Palestine.

Although the Lebanese consider themselves Arabs, speaking Arabic, the spread of the Amorite laws makes it very probable that both the Amorites and Lebanese are closely related. Probably both are related to the Hittites or Proto-Hittites, the Hatti and Hurrians, as the area covered by this laws corresponds with the extent of the Hittite empire, that covered Amorite plus the mountainous ranges and coastland of Syria for many centuries B.C. They may have lived only temporarily and less extensively in Palestine.

In favour of this is the resemblance of the pictures of Hittites on Egyptian monuments of the 13th century B.C. and modern Armenians (fig. 5).

It thus appears that the Hittite, Khabiru, Amorites and Lebanese originated from a large group of people once possessing the whole "fertile crescent".[1])

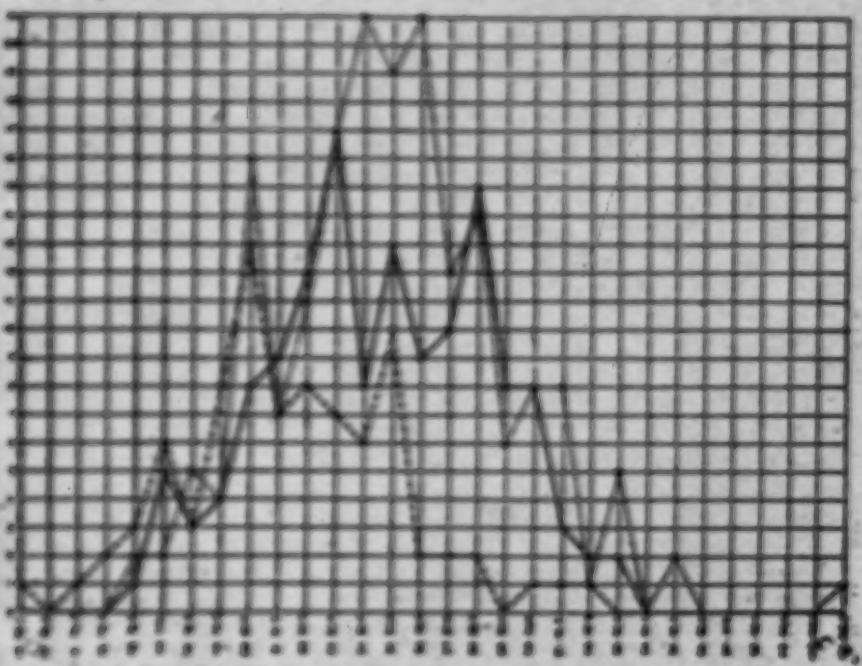

Fig. 5. Dotted line Lebanese curve, full line Alawites, broken line Indians.

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1) Fig. 4 shows that also with the Alawites hypsobrachycephaly is prevailing and that here the dinaric border ratios practically fails (the Alawites measured came from Safeita).

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LEBANON MEI
ARMENIANS RT 3



I may add to this that a similar index (85—85.9) also occurs with a part of the population of Mesopotamia, the so-called Kelten Araber of the present link (fig. 5), so that we may suppose that the Proto-Hittite race once extended at least as far as the Persian gulf.

A closer inspection of the superposed Armenian and Lebanese curves (fig. 3) however shows that in the Lebanese curve there is another peak, at 80—80.9, that fails with the Armenians, so that apparently the Lebanese are not only Armenoid, but also contain another element:—

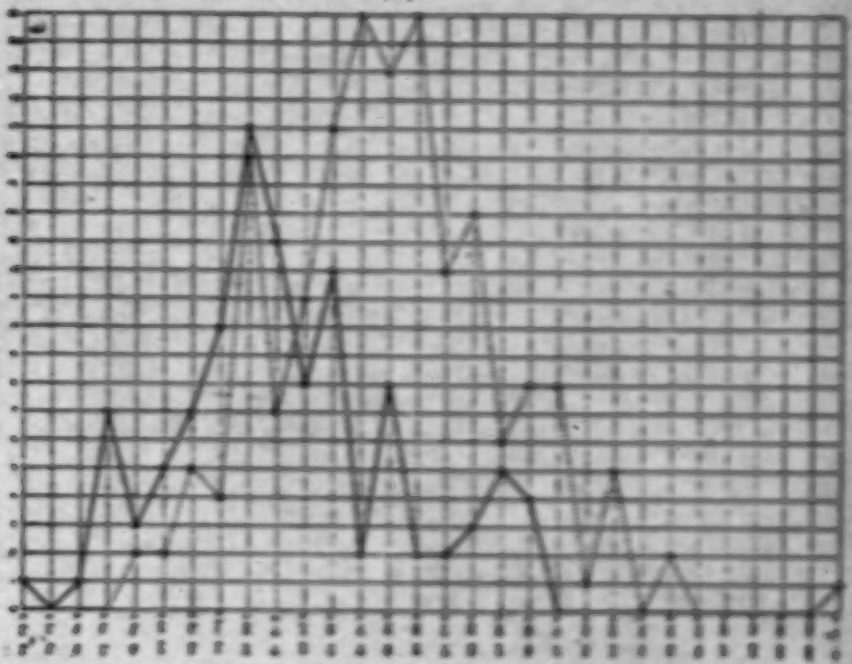

Fig. 6. Dotted line Lebanese, continuous line desert border population from Damascus to Aleppo.

This element is the same as the population of the desert border cities, Damascus, Ma'alulah, Homs, Hama, Aleppo[1]), as appears from the superposition of the frequency curves made of the Lebanese and desert border populations (fig. 6). To what race this population belongs I do not know, but I shall speak of it again when dealing with the Semites. Here it may suffice to say that this

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1) There seems to be an increase in, say, the population of these cities a result of Urban influencing; rather a result of Urban attraction (cf. Rigby chapter XII) of special groups.

Sb. Kapparis D-6 (SPB-50) 1902 MS 10660a Exp: MS
LEBANON M81
ARMENIANS73
ARABS M10



"short headed index" also occurs in Mesopotamia (see at 80—80.9 in fig. 5) and, also, in Palestinian "Arabs" (at 80—81.9 fig. 6).

Before dealing with the groups of people that might be represented by this graph, I have to speak of the semitic races: the Arabs and the Jews. Arab tradition divides the Arab people in two groups, the monophyletic Adnan Arabs—(al 'aribu'ibu) and the brachycephalic Kahtan Arabs (al 'aribu).—

The origin of the Kahtan Arabs—considered by the Arabs themselves as the most ancient stock (al aribu) is very obscure. Nowadays they mostly live in Irak and in Arabia proper, especially in Yemen. Sidgwick who emphasized their brachycephalic character supposes them to be allied to the Accadians, with whom they may have several features in common, e.g. a more fleshy nose. As long as so little is known concerning the anthropological position of the ancient inhabitants of the Southern region, we should wait for more data.

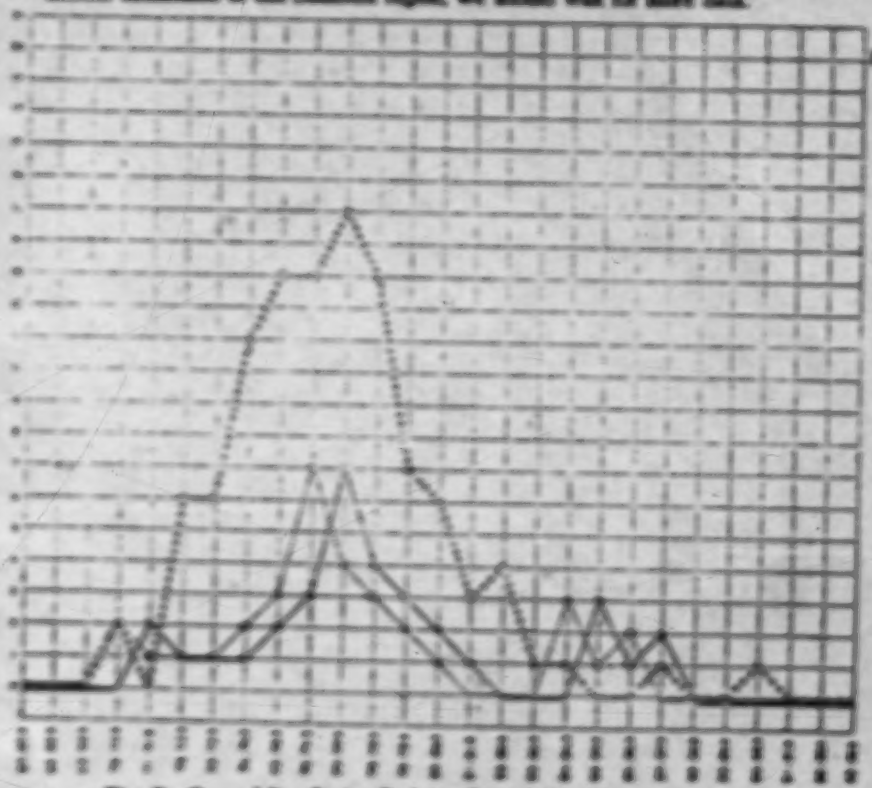

Fig. 7. Cranial Size Series Bedouins, Dotted line Phoenicians and Palestinian Skulls.

Lebanon HEI

141 flattened occiput is one of the characteristics of the Dinaric race discussed by Carleton Coon in his book The Races of Europe. To a certain extent this may be ascribed to the influence of cradling. The shortest mean head length is 176 mm for Mitzeli, the longest 179 mm for Alouite. The head breadths range from 140 mm for Alouite to 158 for Mitzeli. The Mitzeli head height is relatively high, mean 139, but the Alouites are low, mean 135 mm. By dividing the head length into the head breadth and multiplying by 100 we determine the cephalic index; cephalic indices of 80% and above are classified as brachycephalic, those between 75 and 79.9 as mesocephalic and those 75 and below as dolichocephalic. The Lebanese are brachycephalics or hyper-brachycephalics, Mitzeli mean cephalic index 87%, Druzes 87%, Beiuns 86% and Alouites 84%.

174 Who are these extreme brachycephalics living in the Lebanon Mountains, surrounded on the east, south and southwest by extremely long-headed Mediterraneans? How long have they been here, from where did they come and to what places have they migrated?

Some people are of the opinion the Lebanese are descendants of the Phoenicians. I think we can definitely state that the Lebanese are not descendants of the Phoenicians. The two differ radically in head form. A number of Phoenician skulls have been studied in North Africa, principally from the old Phoenician city of Carthage. These skulls were long, narrow and had cephalic indices of 74%. Dr. Sergeyi measured 15 skulls from Phoenician tombs in Sidon dating from about 900 B.C. The Sidon skulls were also long and narrow with a cephalic index of 74.

In general there is a more or less continuous mountain chain extending from the Lebanon on into Turkey and from there into the Caucasus. Most of the inhabitants of this extensive mountain zone are hyper-brachycephalics. We cannot say where the Lebanese originated but they certainly are related to the peoples of the north. A general term for the common group is protoarmenoids or Armenoids. Similar peoples are prevalent in some of the Balkan states, particularly Albania.

We know that the Lebanese have been here a long time because, as pointed out by Professor Coon, brachycephalic seafarers migrated from Lebanon and Cyprus as early as 3000 B.C. and carried metal into south-western Europe.

144 Professor Coon of Harvard University has also suggested that these Lebanese should be classified as Dinarics and that they are the result of mixture between Alpine brachycephalics and long headed Mediterraneans. There is one set of dominant characteristics which pervades the Dinaric groups — hyper-brachycephaly, nasal convexity and occipital flattening. In spite of the controversial cephalic index, many of the Lebanese are Alpine in having bulbous noses, wide faces, abundance of body hair and beard, thick set body form with short arms and legs and broad hands and feet.

Kappers D-5 (ca. 1933) 1934 M3 Middle East M3
ALAWITES M07
LEBANON M81



## The Lebanese and Alouite people. The Druses.

As appears from the preceding pages, many centuries ago several groups of the Hurrians of Urartu changed their name and language. The same is found in the West with the population of the ancient Subartu, whose descendants, the Lebanese and Alouites, now speak Semitic.

Their relation to the other groups appears from the fact that the frequency curve of my Lebanese contains practically the same shape as my Armenian curve, as the superposition of these curves shows.

However, a closer inspection of the superposed Armenian and Lebanese curves (fig. 11) shows that in the Lebanese curve there is an additional peak, at 80—80.9, that fails with the Armenians, so that apparently the Lebanese contain an additional element.

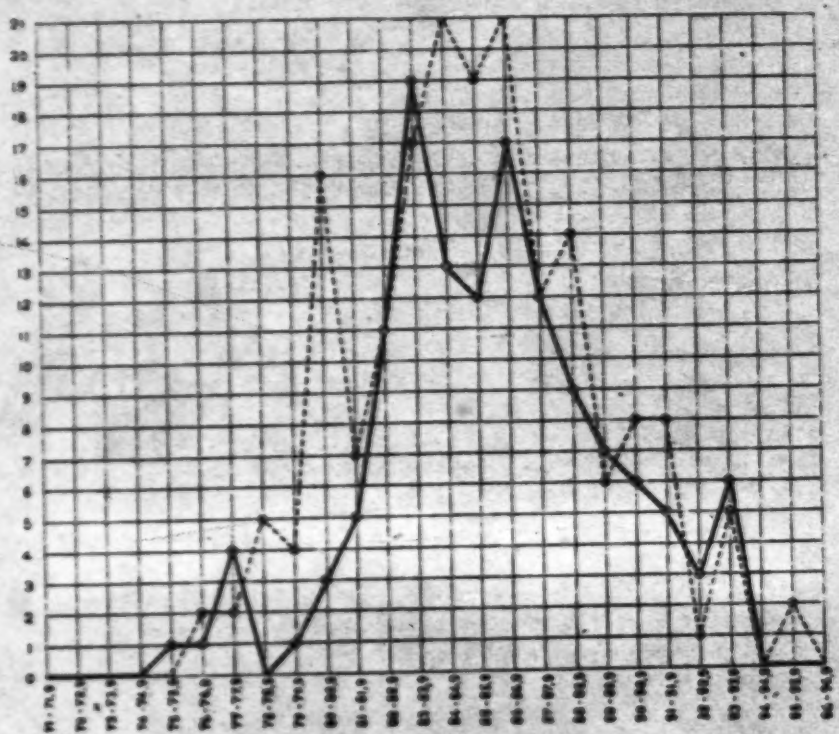

Fig. 11.

——— Cephalic length-breadth indices of 135 Armenians superposed upon the
——— Cephalic length-breadth indices of 175 Lebanese, showing that both people largely descend from the same stock (index 83—86).
Contrary to the Armenian curve, the Lebanese curve shows an additional peak at 80—80.9. After the measurements of the author.

86 Kappers D-8 (ca. 1933) 1936 MI Middle East MI



This element is the same as the population of the desert-border cities, Damascus, Ma'allulah, Homs, Hama, Aleppo, as appears from the superposition of the frequency curves made of the Lebanese and desert-border population (fig. 12). To what race this population belongs will be discussed in Chapter IV. That the additional peak in my Lebanese curve is

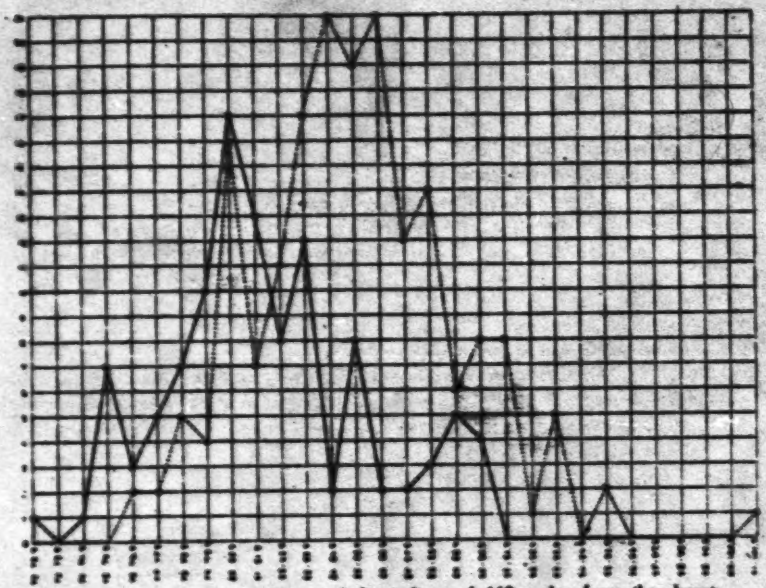

Fig. 12. Continuous curve: cephalic indices of 110 males from the desert-border cities: Damascus, Ma'allula, Homs, measured by the author. Dotted curve: 175 Lebanese.

caused by an admixture from the "*desert-border population*" appears also from the fact that in and near Safitah, a place in the Alouite mountains, which lies further away from the desert-border and connections of which with the larger desert-border cities consequently are not so easy as in the Lebanon and Antilebanon, this admixture fails, as is seen in fig. 13 in which the continuous curve of 145 Alouites from the surroundings of Tripolis (23), Safitah (94), and Bishraye (28) is superposed on the Lebanese curve.

The table (p. 24) shows that the real Lebanese and Aloui are equally hypsicephalic as the Armenians.

I may add to this that the blood type of the Lebanese (2.56), too, comes much nearer to the Armenian (2.31) than to the Beduin type (1.59). [143]

In the West this race has spread as far South as the mountains and coasts of Syria, but much less in Palestine, as appears from the fact that the Subarean peak(s) do not occur with the Palestinians (see below).

55: Kappers D-5 (ca. 1933) 1934 M1 Middle East M1
ALAWITE 1909
LEBANON 1911



| Group | Length | Breadth | Height | Br. l. ind. | Br. h. ind. | L. h. ind. |
|---|---|---|---|---|---|---|
| Armenian ♂ | 18.14 | 15.62 | 13.11 | 86.11 | 83.93 | 72.27 |
| Armenian ♀ | 17.84 | 15.09 | 12.36 | 86.04 | 82.18 | 70.71 |
| Real Lebanese ♂ | 18.06 | 15.53 | 13.18 | 85.99 | 84.87 | 72.98 |
| Real Lebanese ♀ | 17.41 | 14.95 | 12.55 | 85.87 | 83.95 | 72.08 |
| Aloui (Chiefly ♂) | 17.85 | 15.27 | 13.10 | 85.66 | 85.67 | 73.39 |

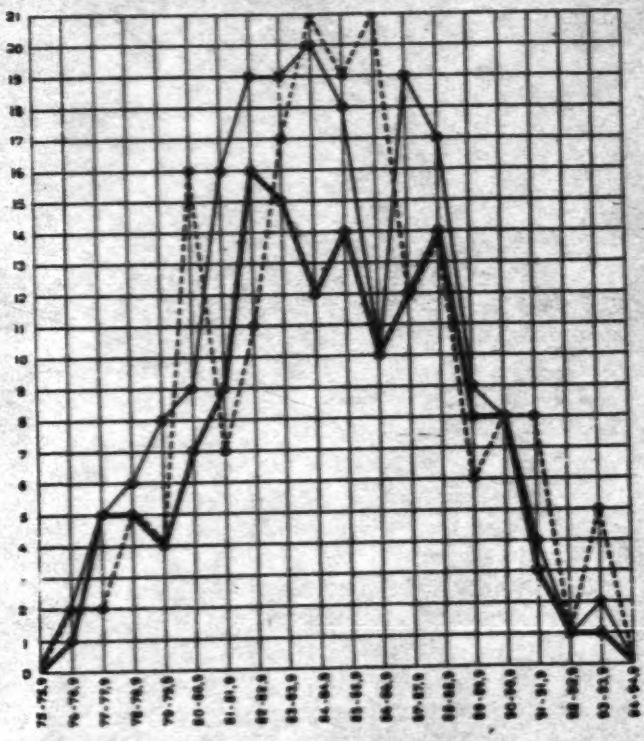

Fig. 13. Thick continuous curve: cephalic indices of 145 Aloutes measured by the author. Thin continuous curve: the nine plus 48 Annamites, measured by CHANTRE. Dotted curve: Lebanese indices.

Probably all the people hitherto described are related to the Subarean Hittites or Proto-Hittites, the Hurrians, as the area covered by this index people corresponds with the extent of the Hittite empire. This people covered Anatolian Armenia, invaded Mesopotamia on the East and in the West covered the mountainous ranges and coastland of Syria for many

55: Kappers D-5 (ca. 1933) 1934 M1 Middle East
ALAWITE M07
LEBANON M21
DRUZE MD6



centuries B.C., while they occupied Palestine only temporarily and less numerously, the most Southern Hittite ruins being found near lake Tiberias.

Another prevailing brachycephalic — also partly hyperbrachycephalic people are the *Druses*, many of whom live also in the Lebanon, having their chief centre in the Hauran district, South of Damascus, North of Mount Hermon.

With Dr. Kh. FURAYHA I measured about 90 Druses, nearly all men. Their average measurements and indices were:

| Group | Length | Breadth | Height | L. br. ind. | Br. h. ind. | L. h. ind. |
|---|---|---|---|---|---|---|
| Druses ♂ | 17.82 | 15.55 | 12.85 | 87.26 | 82.9 | 72.11 |

Miss N. IZZEDDIN, who measured a great many of her kinsmen, kindly gave me the following averages expressed in m.m. as a preliminary result of her work.

| Druses | Length | Breadth | L. br. ind. | Height | Bizygom. |
|---|---|---|---|---|---|
| Men 20—65 y. | 180.84 ± 0.34; T = 6.76 | 156.13 ± 0 29; T = 5.83 | 86.45 ± 0.19; T = 3.86 | 134.34 = 0.40; T = 8 | 139.72 ± 0.28; T = 5.6 |
| Women 20—65 y. | 171.89 ± 0.41; T = 6.42 | 149.59 ± 0.30; T = 4.74 | 87.18 ± 0.28; T = 4.37 | 126.77 ± 0.43; T = 6.74 | 130.9 ± 0.25; T = 3.96 |

| Total fac. h. | Upp. fac. h. | Nasal h. | Nasal br. | Standing h. |
|---|---|---|---|---|
| 126.37 = 0.33; T = 6.62 | 68.85 ± 0.25; T = 5 | 55.98 ± 0.19; T = 3.88 | 35.— ± 0.14; T = 2.76 | 165.6 ± 0.30 T = 6.04 |
| 114.5 = 0.34; T = 5.35 | 62.41 ± 0.23; T = 3.60 | 51.87 ± 0.23; T = 3.61 | 30.52 ± 0.15; T = 2.30 | 152.25 ± 0.31; T = 4.86 |

These indices[1]) as well as those measured by SHANKLIN, also registered in fig. 14, show the prevailing brachycephalic character of the Druses.

This also appears from the Druse skull — kindly given to me by a Druse — so that the authenticity of the material is guaranteed.

The planoccipital character, and height, of this skull are equally striking as with the Lebanese skull in the same figure 14a.

[1]) The curve of Miss IZZEDDIN's Druses always two indices (73 and 74; 75 and 76 etc.) are grouped together.